
INTERNATIONAL BULLETIN OF PLANT PROTECTION

DISCOVERIES AND CURRENT EVENTS *

Dutch East Indies : Pests of Various Native Crops (I).

Rice. — The white rice borer (*Scirpophaga innotata*) is every year a serious pest in different parts of Java. VAN DER GOOT has proved that this enemy can be controlled successfully by postponing the sowing out of the rice till the flight of the *Scirpophaga* moths has taken place. It may be remembered, that the little borers pupate in the rice-stubble and that the moths issue from the pupae almost simultaneously. The flight of the moths occurs 6 to 8 weeks after the beginning of the rains.

The system of interdicting the rice growers to sow out before the occurrence of the moth flight, was first applied in 1925 and this in the Tandjoeng district. This was repeated in 1926, 1927, and 1928. The success was very apparent and wherever the Government succeeded in making general the application of the rule of sowing out at the right time, the loss by the borer was reduced to small proportions. On the other hand it was clear that in those places, where some rice growers did not follow the prescription and sowed out before the moth flight, the borer damage was greater and sometimes very important.

In 1928 this system of prescribing the date before which sowing out was not allowed, was also applied in Indramajoe and preparations were made to have it applied in 1929 in several other districts. In these districts observations were made about the moth flight by means of so called catch-lamps.

Serious damage was done in this year in the rice fields of West Java by larvae of the order of Lamellicornia (*Euchlora viridis* in some parts of Java and *Exopholis hypoleuca* in others). Experiments were made by sowing out the rice at different times of the year.

The rice seedling fly (*Atherigona exigua*) was successfully controlled in the rice fields near Buitenzorg by covering the seed beds with mosquito netting. This fly was also found damaging the young maize plants.

Experiments in controlling the sawah rat (*Mus rattus brevicaudatus*) were continued, mainly in the Garoet district. The time of propagation was studied more carefully. It seems very probable that propagation takes place only during a short time of the year and that only in this time the rat has a permanent home, while during the rest of the year the animals lead a migrating life.

Different methods of killing the rats were tried. Very satisfactory results were obtained by applying the native method with some improvements. The main point in the native method is the introduction into the holes of smoke, ob-

* In this, as in the two next chapters, the countries are arranged in French alphabetical order.

(1) Communication from the official correspondent to the Institute, Dr. C. J. J. VAN HALL, Baarn.

tained by burning coconut fibre impregnated with sulphur and salpeter. To this purpose a kind of bellows are used. No success was obtained by bringing cyanodust (cyanamide) into the holes or using baits with barium-carbonate.

Coconut. — Slug caterpillars (*Ploneta diducta* and other species) were in 1928 very troublesome. Spraying with lead arsenate was successfully applied in some places. In other places, the pest could be checked by cleaning the soil and burning the numerous cocoons buried between refuse.

The control of the *Brachartona* caterpillar by means of cutting away all the leaves, leaving only the four young ones in the top, was successful in those cases in which the measure was applied quickly after the outbreak and at the right time. No cutting should be done when there are still moths flying about or when the caterpillars have not yet attained a size of 8 mm. In this way the most important parasite (*Apanteles brachartona*) will be spared.

A law is in preparation, which will make the application of the method compulsory.

Against *Aspidiotus destructor* in the Sangir island and *Aleurodicus destructor* in the Saleier islands parasites were imported from other islands of the Archipelago, as described below.

LEEFMANS has called attention to the fact that the parasites of different insect pests are not equally distributed over the whole Archipelago and that each island has its own fauna of parasites. As a consequence one pest is sometimes very serious in one island, where it is not or almost not hindered by parasites, and unimportant in another island, where it is kept in check by efficient parasites. It is therefore not always necessary to look for parasites from abroad, in case it seems indicated to try the importation of new parasites; these can not seldom be obtained from other islands of the Archipelago. This method was applied in the following cases.

On the Talaud islands an egg-parasite of the coconut locustid (*Sexava coriacea*) was imported from Ambon in 1926. In 1928 it could be stated, that the parasite was gradually increasing in number and was spreading. The highest percentage of parasitized eggs found was 6 %.

On the Saleier island and on the island Boni the coconuts were in the last few years badly damaged by the coconut whitefly (*Aleurodicus destructor*). In Java this whitefly is rather common but it is kept in check by parasites, which fail on the first mentioned islands. One of these hymenopterous parasites was brought in 1928 to Saleier and Boni. In the course of the year several times new material of the parasite was imported into the stricken islands. Already in September it was apparent, that the parasite was spreading rapidly and that in some places the *Aleurodicus* pest was practically exterminated.

The coconut *Aspidiotus* (*Aspidiotus destructor*) caused enormous damage on the Sangir islands. Parasites were not present in any number. In Java the lady bird beetle (*Comperella unifasciata*) keeps the Coccid practically in check. This beetle was imported in 1928 into several places of the Sangir islands. It is now well established. In the end of the year another beetle (*Chilocorus politus*), which proved to be in the laboratory an efficient enemy of the Coccid, was sent to Boroko, North Celebes, where *Aspidiotus* was doing much damage.

Corn. — Cutworms (*Agrotis ypsilon*) are very destructive in the corn-fields of Singkang, South Celebes. Important parasites could not be found. A preliminary investigation in Java proved the presence of different parasites. The most effective of these will be brought to Singkang.

Coffee. — The whitefly of coffee (*Ceroputo spinosus*) is a serious pest of the coffee fields of the natives in South Celebes. From Java 1000 specimens of the ladybird beetle (*Cryptolaemus montrouzieri*), a species which was imported in 1918 from Hawaii, were sent to Celebes in the month of February. An investigation, carried out in September, proved that the beetle had eradicated the whitefly over a great part of the infested district.

Turkey : Crop Pests (1).

Dacus oleae Rossi. — Very injurious to olive trees on the coasts of the Mediterranean and of the Sea of Marmara. This pest is controlled by the Berlese method.

Nematus salicis L. — Very injurious to willows near Angora.

Anisoplia austriaca Hbst. and *A. cyathigera* Scop. — Injurious to wheat, rarely to barley.

Capnodis tenebrionis L. — Injurious to plum and pear trees, at Angora.

Perotis lugubris F. — Injurious to cherry trees, near Constantinople.

Ptosima g-maculata F. — Injurious to pear trees, at Angora.

VARIOUS QUESTIONS

DATA AND INFORMATION ON DAMAGE CAUSED TO CULTIVATED CROPS BY THE COLD OF THE WINTER 1928-1929 *

Bermuda (2). — The minimum temperatures during the season of 1928-1929 were not sufficiently low to cause any appreciable damage to crops in Bermuda.

Canada (3). — The winter of 1928-29 was not particularly destructive to crops in Canada. Of course, very few crops are sown in the fall except in the warmer sections of Canada. Our fall wheat and rye came through very well. In fact in Western Ontario, where practically all the fall wheat of Eastern Canada is sown, it wintered better than it had done for two or three years. Except in some isolated cases, alfalfa in Ontario came through the winter in excellent condition. In the provinces east of Ontario very few fall grains or alfalfa are sown. Red clover in Eastern Canada wintered fairly well but there were sections which killed out rather badly. In the great plains of Western Canada very few fall crops are sown. Ninety per cent or more of the land is devoted to the production of spring wheat. In Southern Alberta where fall wheats are sown they wintered very well.

Ceylon (4). — No unusual cold weather was experienced in Ceylon during the winter 1928-29.

(1) Communication from the official correspondent to the Institute, Mr. SUREYA, Councillor of State, Angora.

* Continued from No. 10.

(2) Communication from the Department of Agriculture, Bermuda, to the International Institute of Agriculture.

(3) Communication from the Department of Agriculture, Dominion of Canada, Ottawa, Ont., to the International Institute of Agriculture.

(4) Communication from the official correspondent to the Institute, Mr. J. HUTSON, Entomologist, Entomological Division, Department of Agriculture, Peradeniya, Ceylon.

Irish Free State (1). — Although the weather in Ireland in the early months of 1929 was colder than usual, the extreme and prolonged cold experienced elsewhere was not encountered. This was to be expected in view of the known climatic conditions of the Island, and its well-marked ocean climate.

A temperature as low as 7°F was recorded on the grass at one station on one night, but this was quite exceptional. The lowest temperature recorded on the same night at any other station was 20°F; and the lowest recorded at any station on any other night was 19°F. Thus for practical purposes the minimum temperatures recorded from January to April (incl.) 1929 varied from 19°F to 26°F, with the one exception noted.

The consequence was that no appreciable harm was done to vegetation. Holly (*Ilex Aquifolium*) and ivy (*Hedera Helix*) were not injured in any way, and delicate southern plants such as *Choisya ternata* and *Escallonia macrantha* were only touched with frost in the open, without being seriously injured.

India (Burma) (2). — In Burma cold is never great enough to cause damage to plants in the plains and rarely to plants in the hills. The winter of 1928-29 was warmer than usual in the plains (minimum 50° F. for two days only) and not noticeably colder than usual in the hills. The higher parts are so little developed and practically unknown agriculturally that I can give no information.

West Indies (Trinidad) (3). — As Trinidad is well within the tropics, the severity of last season's cold weather was not experienced.

The lowest temperature for the season 1928-1929 occurred on January 26th when a temperature of 58.4 F was recorded.

Nigeria (4). — The climatic conditions were not affected here by the cold of the last winter. January is always comparatively cold here due to the "Harmattan" wind which passes over the Sahara Desert and is heavily laden with sand. The temperature this year was not lower than in other years from this cause and moreover the crops yields were not affected. In fact the cotton crop was much better than usual.

Palestine (5). — No exceptional losses were caused to cultivated crops by the cold of the winter 1928-1929.

In fact, record yields are expected in the case of a majority of staples owing to an exceptionally fine rainfall.

Dominican Republic (6). — No serious damage to crops was caused by the cold of last winter.

(1) Communication from the official correspondent to the Institute, Dr. Paul A. MURPHY, Albert Agricultural College, Glasnevin, Dublin, Irish Free State.

(2) Communication from the official correspondent to the Institute, Mr. D. RHIND, I. A. S., Economic Botanist, Burma, Mandalay.

(3) Communication from the official correspondent to the Institute, Mr. A. K. BRIANT, Mycologist, Imperial College of Tropical Agriculture, Trinidad, West Indies.

(4) Communication from the official correspondents to the Institute, Mr. T. LAYCOCK, Senior Mycologist, and Mr. F. D. GOLDING, Senior Entomologist, Agricultural Department, Ibadan, Nigeria.

(5) Communication from the official correspondent to the Institute Mr. F. R. SAWER, M. A., B. Sc., Director of Agriculture and Forests, Department of Agriculture, Forests and Fisheries, American Colony, Jerusalem.

(6) Communication from the official correspondent to the Institute Dr. R. CIFERRI, Phytopathologist and Director of the Estación Nacional Agronómica y Colegio de Agricultura, Moca, República Dominicana.

Rumania (1). — The exceptional cold of the 1928-1929 winter caused heavy losses among the crops in Rumania. The winter was severe not only on account of the minimum temperatures recorded in certain localities being -35°C , and even -38°C , during February, but also because until towards the end of April the temperature remained lower than usual. If the records taken in the principal localities during December 1928, January, February, March and April 1929 are considered it is seen that the average of the minima for December was -13° , that the temperature sank to -23° at Bod, in the province of Transylvania, on 26 December, and that the highest minimum, which was $-4^{\circ}5$, was recorded on 23 December in Dobrudja (Constantza). The month of December was very rainy; the heaviest rainfall was recorded in the north-eastern district. The month was excessively wet in Oltenia and Muntenia, rather dry in Maramuresh and Transylvania, dry in Crisana and very dry in Banat. The number of days during which snow lay on the ground varied in different regions. In the mountains the average number was 16 days, with a maximum of 30 in the Pruth valley and a minimum of zero in the valleys of the Bega-Tisza and the Dniester and in the Black Sea basin. The maximum depth of snow was 36 cm. in the Pruth valley. In the hilly region the average was 14 days with a maximum of 22 in the Pruth valley and a minimum of 4 days in the Black Sea basin. The maximum depth was 26 cm. which was recorded in the Pruth valley. In the lowland region the average was 9 days with a maximum of 20 in the Danube valley, a minimum of zero in the Dniester valley and a maximum depth of 22 cm. in the Jiu valley.

In the central and northern parts of the country agricultural activities ceased from the beginning of December on account of the cold and snow. The autumn crops were not damaged by the end of the month although the greater part of the ground was uncovered by this time.

January. — The figures recorded during January 1929 show that the average minimum temperature was $-20^{\circ}8\text{ C}$ and the lowest minimum reached was $-31^{\circ}5$, in Transylvania (Gheorgheni) on 24 January; the highest minimum, $-11^{\circ}3$, was recorded in Dobrudja (Balchik) on 11 January.

The number of days during which snow lay on the ground was high in most regions. The depth of snow even exceeded 1 m. in the mountain region of the Jalomitza valley. The records show that snow lay in the mountainous regions on an average for 22 days, with a maximum of 31 in the valleys of the Pruth and Dniester and a minimum of zero round the Black Sea basin. The maximum recorded depth of snow was 101 cm. in the Jalomitza valley. In the hilly regions snow lay on an average for 21 days, with a maximum of 29 days in the Dniester valley and a minimum of 7 round the Black Sea. The maximum depth, 48 cm., was recorded in the Olt valley. In the lowland regions snow lay on an average for 15 days, with a maximum of 25 in the Olt valley and a minimum of zero in the Pruth and Dniester valleys, and with a maximum depth of 41 cm. in the Jiu valley.

February. — The average of the minimum temperatures fell to $-17^{\circ}4\text{ C}$; the lowest recorded was -38° on 10 February in Muntenia (Casa Omul). The highest absolute minimum, $-24^{\circ}2$, was recorded the same day in Muntenia at Bucharest. Snowfall was abundant throughout the month; the snow lay longest in the North, in the mountain region of the Pruth and Dniester, and for the shortest time in the South and South-East. The records show that the average persistence of the snow on the ground was 22 days in the mountains, the maximum of 28 days was reached

(1) Communication from the official correspondent to the Institute, Professor Dr. Tr. SĂVULESCU, Director of the Central Phytopathological Station at Bucharest.

in 5 regions, of the Jiu, Jalomitza, Sereth, Pruth and the Dniester, and the minimum of zero in the Black Sea region. The maximum depth of snow, 61 cm., was recorded in the Dniester valley. In the hill region the average duration of snow was 26 days, with a maximum of 28 in the valleys of the Dniester, Jiu and Bega-Tisza and a minimum of 15 round the Black Sea. The snow reached a depth of 56 cm. in the Danube valley. In the lowland districts the average persistence of snow was 19 days, with a maximum of 26 in the Jiu valley and a minimum of zero in the Danube valley. The maximum depth of 25 cm. was reached in the valleys of the Olt and Jiu.

March. — Very low temperatures were still recorded during March. The average of the minima was $-17^{\circ}.5$ C; on the 3rd the temperature fell to $-25^{\circ}.3$ in Moldavia and Bucovina (Cernautzi). The highest absolute minimum, of $-10^{\circ}.5$, was recorded on the 4th in Banat (Temisoara).

The number of days during which the snow remained on the ground was still high.

In the mountains the average persistence was 16 days, with a maximum of 31 in the Pruth valley and a minimum of zero in the Bega-Tisza valley and round the Black Sea. The maximum depth of 27 cm. was recorded in the Dniester valley. In the hilly regions the average persistence was 11 days, with a maximum of 24 in the Dniester valley and a minimum of 3 in the Mures Tisza valley. The maximum depth, 9 cm., was reached in the valleys of the Sereth and Danube. In the lowlands the average persistence of the snow was 5 days, with a maximum of 14 in the Jiu valley and a minimum of zero in the Pruth valley. The maximum depth of 8 cm. was reached in the Danube valley.

April. — During April the temperatures were below the normal over the whole country. The average for the month showed a discrepancy of $-3^{\circ}.5$ C. In the different provinces the average drop from the normal varied from $-2^{\circ}.9$ in Oltenia to $-4^{\circ}.8$ in Bessarabia. The cold weather persisted everywhere. The minimum temperature was recorded in Muntenia where the thermometer dropped to -25° on the 8th.

The weather was warmer in the south west of the country and colder in the mountainous northern region. A minimum below zero was recorded everywhere. The highest minimum was recorded in the provinces of Dobrudja (Sulina) and Muntenia (Braila).

The following table gives a summary of all these figures.

Month	Temperatures		Snowfall											
	Average of the minima	Absolute minimum	Mountainous Region				Hilly Region				Lowland Region			
			Persistence of snow on the ground				Persistence of snow on the ground				Persistence of snow on the ground			
			Average	Maximum	Minimum	Maximum depth of snow	Average	Maximum	Minimum	Maximum depth of snow	Average	Maximum	Minimum	Maximum depth of snow
December 1928	-13° C	-23° C	16	30	0	36	14	22	4	26	13	20	0	22
January 1929	$-20^{\circ}.8$ "	$-31^{\circ}.5$ "	22	31	0	101	21	29	7	48	15	25	0	41
February "	$-27^{\circ}.4$ "	-38° "	22	28	0	43	26	28	15	56	19	26	0	25
March "	$-17^{\circ}.5$ "	$-26^{\circ}.8$ "	16	31	0	27	11	24	3	9	5	14	0	8
April "	$-5^{\circ}.3$ "	-25° "	—	—	—	—	—	—	—	—	—	—	—	—

It is seen from the table and facts given that the exceptional cold of the 1928-1929 winter lasted till towards the end of April; this hindered the thawing of the

ground which remained frozen to a depth of 1 m. and consequently hindered the spring seeding and greatly retarded growth. On an average wild plants and crops were retarded from 20 to 30 days. The most severe month was February and the regions most affected by the frost were the whole Danube plain, Dobruja, Southern Bessarabia and Moldavia.

Cereals. — The autumn barley suffered more than the other cereals. In certain regions there was a 100 % loss; the worst damage was recorded in the Danube plain.

From 50-60 % of the autumn wheat (*Triticum vulgare* var. *erythrospermum* and *T. vulgare* var. *ferrugineum*) was killed.

The 1928 autumn sowings covered about 2,000,000 ha., and in the spring of 1929 800,000 ha. were re-sown, mainly with maize, mostly in the Danube plain, Dobrudja and Moldavia; the areas which were not re-sown yielded only from 30 to 50 % of the normal production. It was often noticed that in places not reached by the frost twin shoots sprouted which eared in a normal manner but remained sterile.

Barley and wheat suffered not only from the hard frosts of February but also from the cold and extreme humidity of April. In the northern region (Northern Moldavia, Northern Bessarabia, Bucovina and Transylvania) where the ground was covered in snow for a considerable time the cereals suffered less from the frost even during February. The worst losses were recorded in the regions of the steppes.

The small local variations recorded were not due to varietal resistance but to favourable orographical conditions which allowed the accumulation of snow and thus protected the young corn.

It was observed that different varieties of wheat and barley did not show differing resistance to the winter frosts. The prolonged cold of April retarded the ripening of wheat and barley by 20 to 30 days which caused serious infection by *Puccinia glumarum*, from which wheat and barley are usually free in Rumania, being already ripened. The cereals are generally attacked by *P. triticea*. Thus it appears that last winter's cold changed the pathogenic behaviour of the rusts.

The acreage remaining fallow after the autumn sowings of wheat and barley had been ploughed in was sown in the spring with maize. Seeding had to be repeated 2 or 3 times in some places because the seed, which had been kept in stores and shops during the winter, had been frozen and the embryos killed, particularly in *Zea Mays* var. *dentiformis*.

Rape. — From 80 to 100 % of the autumn rape, which is grown in Dobrudja, Bessarabia and the Danube plain, was affected by the frost.

Lucerne. — Freezing of the roots of lucerne to a depth of a metre has hitherto been unknown in Rumania. The old plants suffered more than the young ones, but losses were local and only from 10 to 20 %.

Fruit trees. — These suffered much, specially the walnuts, apricots and peaches. Apples, pears and plums were less damaged. The crops from all fruit trees were poor this year and in certain regions there was no crop at all on account of the fruit buds being frozen.

Vines. — Vines were affected by the cold throughout the whole country and to such an extent that 20 % of the vineyards were wiped out. The production of the remaining vineyards was 50 % below normal because the shoots and buds were partially killed. Vines which were not earthed up suffered most. Most damage was caused in the viticultural region of Cetatea-Alba-Saba, which were planted with direct producers on sandy soil, and in Dragasani, which was planted with grafted vines. In the Cetatea-Alba-Saba region, where it has been possible to

estimate the losses more accurately, it is seen that these concerned 80 % of the vine growing area and reached the value of 260,000,000 lei.

The stocks most resistant to the frosts were nos. 101, 14 and Dulot, the least resistant was *Riparia Rupestris* 3309. The most susceptible scions were the Chasselas, Aligoté and the Ottonel Muscat; the Riesling, the Selection Casière and various indigenous varieties proved more resistant.

The system of pruning has been observed to have a marked influence on the resistance of the vine to frost. Hybrids of American or Franco-American direct producers have suffered little, if at all.

Avenue trees. — In many towns the acacias, limes and elms have been killed, leaving the streets deprived of all verdure and with a most desolate appearance.

Forest trees. — These have been greatly affected, specially the limes and oaks; beeches have proved more resistant.

Wild plants. — In many places the rhizomes of *Agropyron repens* and of *Cynodon Dactylon* and the tubercles of *Lathyrus tuberosus* were killed. On the other hand the growth of weeds has been considerably less than in other years. Pasture has also suffered from the frost.

Sierra Leone (1). — The temperatures obtained during the past winter in this country have been normal.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Argentina. — Decree No. 12 of 4 June 1929 allows until 31 January 1930 the importation, by the ports of Buenos Aires and Rosario, of oranges and mandarins from the Republic of Paraguay.

Each shipment of such fruits shall be accompanied by a health certificate issued by the competent authority and endorsed by the Argentine Consul at the port of embarkation.

Each shipment of mandarins shall on arrival be immediately placed in a cold store where, under the direct supervision of the "Oficina Sanitaria de Importación y Exportación de Plantas y Semillas", the fruit will remain in a refrigerating chamber for 18 days at a temperature of 1-3°C.

Each shipment of oranges shall on arrival be immediately conveyed to Buenos Aires and submitted to quarantine in a cold store or a maximum of 8 days under the direct supervision of the Oficina. In cases where the healthy condition of the fruit is doubtful it shall remain in the cold chamber for 23 days at a temperature of 1-3°C. or for 18 days at 0°C.

The importation of a loose cargo of oranges is prohibited. Oranges shall be separately wrapped and contained in cases of best quality white wood with interior partitions and of the following dimensions:— length 99 cm., width 53 cm. and height 30 cm.; the bottom and lid shall be formed of two or three slats so as to allow a minimum space of 1 cm. to facilitate refrigeration of the contents.

(1) Communication from the official correspondent to the Institute, Mr. E. HARGREAVES, Entomologist, Agricultural Department, Experimental Farm, Njala, via Mano, Sierra Leone.

Oranges and mandarins consigned by rail to Buenos Aires (Federico Lacroze station) will be considered by the Customs House at Posadas as merchandise of transit; trucks carrying such fruits from the time of their entry into Argentine territory will bear the seals of the Customs House, which will also take all useful precautions to ensure the trucks going by the most direct route to Buenos Aires, where they will be submitted to the formalities prescribed by the local Customs House. The Prefects and Sub-Prefects will not issue transport permits to boats carrying oranges and mandarins from places on the banks of the Rio Paraná north of Santa Fé unless a certificate is presented from the manager of the plantation endorsed by the provincial authorities of the place, stating the number of fruits sold and the district in which they were gathered. The Prefect of Barranqueras will forbid the entry of any boats laden with oranges and mandarins of Argentine origin which do not show a duplicate of such a certificate.

Each consignment will on arrival undergo sanitary inspection and when unhealthy oranges are found the whole consignment will be burnt and no compensation will be payable; the transport charges to the municipal premises will be payable by the persons concerned. (*Boletín Oficial de la República Argentina*, Buenos Aires, 12 de junio de 1929, año XXXVII, núm. 10.535, pág. 286).

Western Australia. — In virtue of the Regulation made by the Upper Chapman District Road Board on 12 December 1928, approved by the Lieut.-Governor and Administrator in Executive Council on 5 February 1929, and published by the Director of Agriculture (Departmental No. 304/28; Ex. Co. No. 388) on 6 February 1929, no owner or occupier of land within the district shall:

(a) introduce any stock or farm produce from any place infested with star thistle [*Centaurea*], or (b) remove stock or farm produce from any place infested with star thistle within the district to any other place within or without the district, unless such person obtains and produces to the Board an Inspector's certificate certifying that such stock or produce is free from the seeds of star thistle. (*Government Gazette of Western Australia*, Perth, February 8, 1929, No. 7, p. 259).

* * The Director of Agriculture has notified on 4 July, 1929 (Departmental No. 2070/25; Ex. Co. 1796) that Prickly Potato (*Solanum hoplopetalum*) has been declared a noxious weed in the Mullewa Road Board District. (*Government Gazette of Western Australia*, Perth, July 5, 1929, No. 31, p. 1621).

Italy. — In order to check the spread of the 'mal secco' of citrus trees (see this *Bulletin*, 1929, No. 7, p. 104), the Prefect of the province of Catania by decree of 19 August 1929 has made it compulsory to cut down and burn any branches affected with the disease within the territory of the Communes of Aci Cascello, Aci Catena, Aci Reale, Aci S. Antonio, Calatabiano, Catania, Fiumefreddo, Giarre, Mascali, Piedimonte Etneo, Riposto, S. Agata di Rattinati, S. Giovanni la Punta and S. Gregorio. Such work shall be carried out by the farmer of the land on which the diseased citrus trees occur.

* * The Ministerial Decree of 21 August 1929 specifies the establishments which are made responsible for supervising the application of the Decree Royal No. 2033 of 15 October 1925 concerning the repression of adulteration in the preparation and trading of substances used in agriculture and of agricultural products.

These establishments include:— (a) dealing with seeds and botanical analyses, the Royal Phytopathological Observatories at Turin (for the provinces of Turin,

Novara, Vercelli, Aosta and Cuneo), at Chiavari (for the provinces of Genoa, Savona, Imperia and Spezia), at Pavia (for the provinces of Pavia and Cremona), at Verona (for the provinces of Verona, Padua, Treviso and Vicenza), at Fano (for the provinces of Pesaro and Urbino, Ancona, Ascoli Piceno, Macerata, Perugia and Terni), at Rome (for the provinces of Rome, Frosinone, Rieti, Viterbo, Aquila, Chieti, Pescara, Teramo, Cagliari, Nuoro and Sassari), at Taranto (for the provinces of Taranto, Bari, Brindisi, Foggia, Lecce and Matera) and at Palermo (for the provinces of Palermo, Messina, Agrigento, Trapani and Reggio Calabria); (b) dealing with anti-parasitic substances, the Royal Middle Agricultural Schools at Brescia (for the province of Brescia), at Voghera (for the province of Pavia), at Alanno (for the province of Teramo), also the Agricultural Chemistry Laboratories of the Royal Technical Institutes at Florence (for the provinces of Florence and Arezzo), and at Pesaro (for the province of Pesaro and Urbino). (*Gazzetta ufficiale del Regno d'Italia*, Roma, 23 settembre 1929, anno 70^o, n. 221, pp. 4275-4277).

New Zealand. — By special order made by the Mangaweka Town Board on the 9 April, 1929 and published by the Minister of Agriculture (Notice No. Ag. 2811) on the 21 May, 1929, hemlock [*Conium maculatum*] is declared to be a noxious weed in the Mangaweka Town District. (*The New Zealand Gazette*, Wellington, May 23, 1929, Numb. 38, p. 1455).

*** By special order made by the Pohangina County Council on the 11 May, 1929 and published by the Minister of Agriculture (Notice No. Ag. 2815) on the 28 May, 1929, hemlock and burdock [*Arctium Lappa*] are declared to be noxious weeds in the Pohangina County. (*Ibid.*, May 30, 1929, Numb. 41, p. 1495).

*** By special order made by the Feilding Borough Council on the 11 April, 1929 and published by the Minister of Agriculture (Notice No. Ag. 2822) on the 6 June, 1929, broom (*Cytisus scoparius*) and hemlock are declared to be noxious weeds in the Borough of Feilding. (*Ibid.*, June 13, 1929, Numb. 45, p. 1667).

*** By special order made by the New Plymouth Borough Council on the 4 June, 1929 and published by the Minister of Agriculture (Notice No. Ag. 2823) on the 10 June, 1929, broom and capeweed or Cape daisy (*Cryptostemma calendulaeum*) are declared to be noxious weeds in the Borough of New Plymouth. (*Ibid.*, p. 1667).

*** By special order made by the Rangitikei County Council on the 30 May, 1929 and published by the Minister of Agriculture (Notice No. Ag. 2885) on the 12 June, 1929, Californian or Canadian thistle (*Cnicus arvensis*) is declared not to be a noxious weed in the Rangitikei County. (*Ibid.*, p. 1675).

Peru. — By 'resolución' of 8 February 1929 it has been provided that cotton seed coming from the valleys of Piura and intended for transport into other valleys of the Republic shall be submitted to fumigation under the control of the Agronomic Station of Piura, in conformity with the regulations in force for seeds exported from the port of Pisco. (*La Vida Agrícola*, Lima (Perú), 1929, vol. VI, n^o. 64, págs. 323 y 324).

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